

Abstract

It is becoming increasingly important to improve data throughput in wireless networks. By transmitting data simultaneously at different modulation amplitudes and/or using different code strengths, terminals having different carrier to noise ratios are able to decode the different amplitude levels with varying degrees of success. This allows distant terminals to receive low data rate transmissions at high modulation levels or code rates while nearer terminals can use additional capacity in the transmission by receiving lower level modulation signals or code rates. In this way, distant terminals do not degrade overall network performance. By arranging for terminals to acknowledge receipt of data, re-transmission at different modulation levels or code rates may be carried out by the base station in order to improve performance in the presence of noise without *a priori* knowledge of the carrier to noise ratio for a particular terminal.

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